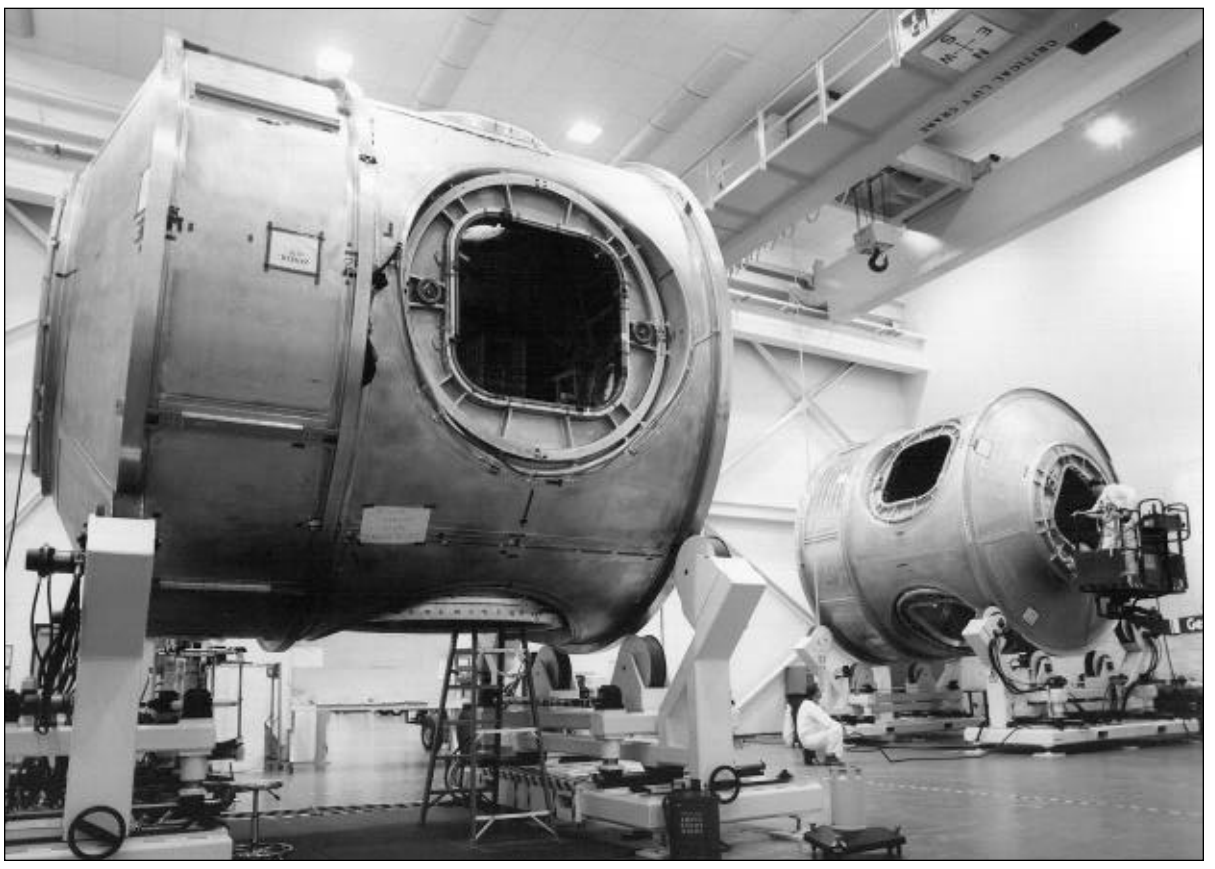
Station Assembly

Work is progressing to launch space station modules, nodes to orbit



The launch of the first module for the International Space Station is less than 20 months away and work to prepare for this historic mission is progressing smoothly.

Engineers at Boeing Defense and Space Group, the prime contractor for the station, have completed the final welds on nodes that will connect station sections that are being developed by the U. S. and its international partners. Node-1 will be docked to the Russian-built core module, or FGB, is set to fly in December 1997 and is currently undergoing stress tests. Both nodes will serve as connecting passageways linking other station modules.

Welds also have been completed on the laboratory module—where astronauts will perform continuous scientific experiments. The lab module was moved to the boring mill in November where its surfaces will be machined for various functions. It will later be covered with a debris-shield blanket, made of material similar to that used in bullet-proof vests. The outer layer will be a thin aluminum debris shield that will give the module added protection against space debris.

With welding complete on the nodes and laboratory modules, the Boeing technicians will now begin welding the habitat module.

The habitat module will serve the astronauts as "home away from home," where the crew will eat and sleep. It will be the same size as the laboratory module, but will have two windows, that promise to be popular off-duty areas for astronauts during their three-month stay aboard the station.

The assembly and welding processes was documented photographically by Boeing and the Space Station Program Office.

Top to bottom, left to right:

1) Workers prepare Node-1, right, and Node-2 for stress tests. The nodes will serve as connecting joints for the station. Each node is 18 feet long and 14 feet wide. The six hatches serve as docking ports for the other modules.

2) The main structure of the U. S. laboratory module—the centerpiece of the many modules and structures the U. S. is building for the station—has been successfully completed by Boeing technicians in Huntsville, Ala. The pressure hull for the laboratory is 28 feet long and 14 feet wide. The lab's exterior waffle pattern strengthens the hull against the harsh environment of space. It is scheduled to be launched November 1998.

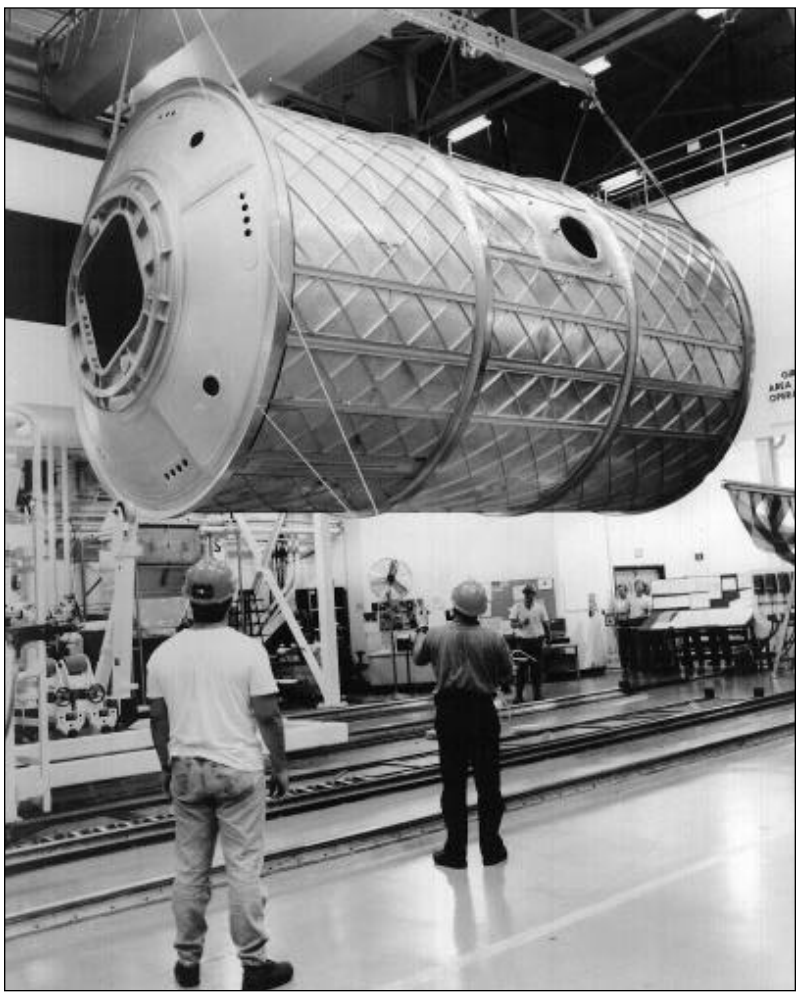
3) Welders use precise instruments to ensure the integrity of the node's welds.

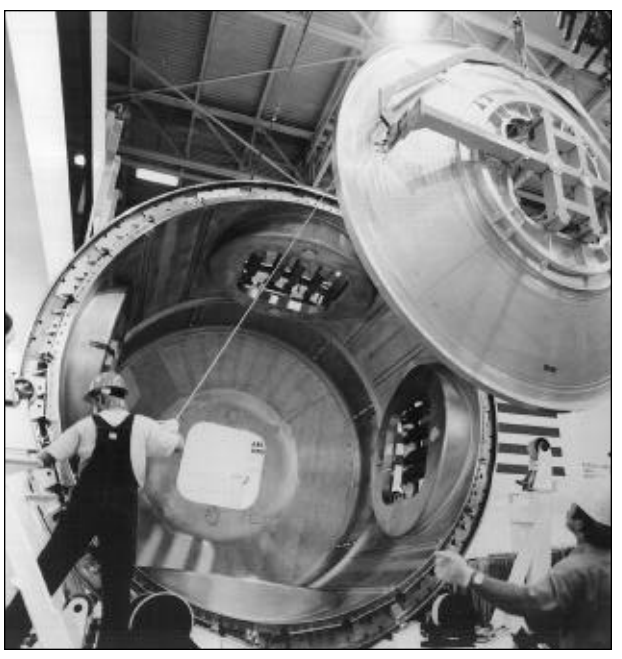
4) A bulkhead is lowered to the end of one of the node modules. Once in position, the bulkhead was welded together.

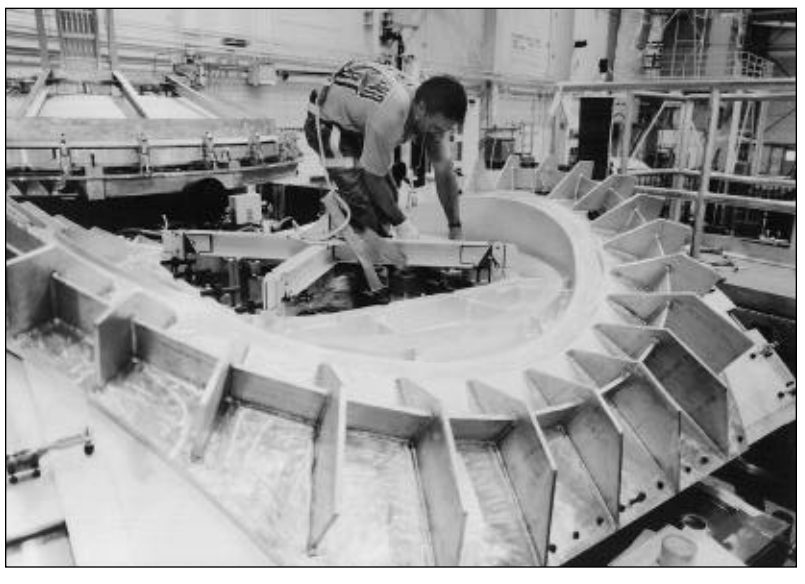
5) A station node awaits stress testing.

6) A Boeing technician aligns the docking plate to the radial docking port skin that will be part of the node.

7) Boeing's internal outfitting team inspects a station standoff. There are four stand-off areas in the station nodes and they provide electrical connections, data management systems, cabling for computers, air conditioning ducts and thermal control tubes. ❑







Photos courtesy of Boeing